Hologram Viewer

Make video images pop off the screen!

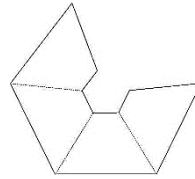
Kit contains:

- 1 transparent viewer template

You will need: scissors, clear tape, and a smartphone (Ask your grown-up's permission if you think you need it!).

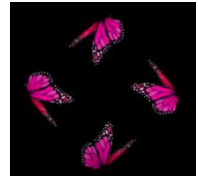
MORTON GROVE PUBLIC LIBRARY
6140 Lincoln Avenue, Morton Grove, IL 60053
Youth Info Desk: 847-929-5102 | mgpl.org

INSTRUCTIONS



Step 1. Cut along the solid lines of the hologram viewer template. (**Tip:** Holding it in front of a light color makes it easier to see.)

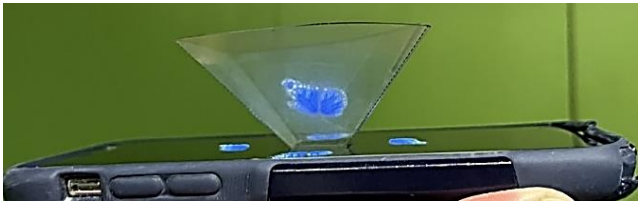
Step 2. Fold along the dashed lines. Then secure the sides together with clear tape as shown. This shape that looks like a square pyramid with the top lopped off is called a **truncated pyramid**.



Step 3. Configure the smartphone! Turn the brightness all the way up. Play a hologram-ready video. Ideas:

- Jellyfish, Butterfly, Fireworks, Bird: https://youtu.be/nQs6gmY286k
- Blooming Flowers: https://youtu.be/cjMRS2VMHHI
- The Princess Leia message: https://youtu.be/cjMRS2VMHHI

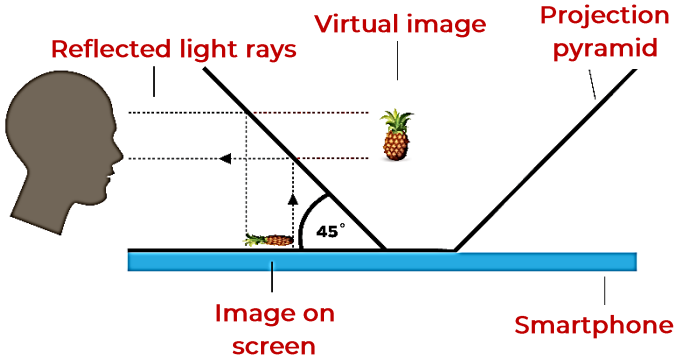
Step 4. Place the small square of your hologram viewer in the middle of the four images. Hold your phone at eye level in a darkened room. The picture will appear above the screen in the middle of your viewer.



WHAT'S GOING ON?

Technically speaking, a **hologram** is a three-dimensional image formed by light beams (like lasers!). Your device creates the *illusion* of a hologram. The clear angled surfaces create a variation on the classic **Pepper's Ghost** optical illusion, invented by John Henry Pepper in the 19th century—which he based on an even earlier process by Italian scientist Giambattista della Porta in 1584. Special effects were always cool!

The Pepper's Ghost technique combines lighting with angled glass to project a false version of a real or recorded image to astonish audiences (i.e., "Look, it's a ghost!"). This trick has been used in theaters, haunted houses, and amusement parks ever since. Your version:



Learn more about how Pepper's Ghost works with the video, "DIY Hacks & How To's: Pepper's Ghost": https://youtu.be/TcqyoYfHIFM

Sources: https://www.scienceworld.ca/resource/peppers-ghost-hologram-illusion/
http://scihi.org/john-henry-pepper-peppers-ghost/
https://astrocamp.org/blog/3dhologram/